VII EXAMPLE CASE SCENARIOS

A. DIRECT APPLICATION PESTICIDE MISUSE

Based on the evidence gathered, there may be an alleged misuse of a pesticide on a commodity or at a site.

The objectives of collecting samples are to prove a violation occurred or whether there are illegal residues on the produce in the field so that a Stop Harvest Order can be issued. Another objective is to determine if a field is safe to enter by field workers.

1. SAMPLING PLAN

Outline sampling goals and plan. Consider the type of pesticide and its chemical properties, method of application, time, etc., before sampling is initiated. Refer to the "Sampling Plan" section in this manual.

2. SAMPLE COLLECTION

This manual outlines the sampling procedures for different types of sampling situations that are likely to be encountered. Prior to collecting samples, refer to the Sampling Procedures Section of this manual to determine the method, location, size, and handling precautions.

Collect at least nine foliage samples in a grid pattern, starting approximately 100 feet from the edge of the field, depending on field size

Collect at least nine soil samples in a grid pattern. Soil samples should be collected if the pesticide was soil injected, side dressed, broadcast preplant/preemergent, etc. The sampling procedures depend on the pesticide's chemical properties, method of application, placement of the pesticide. Consider whether the pesticide could be found on foliage, the commodity, or primarily in the soil. Remember, soil samples are taken to substantiate that a violation occurred.

If the crop is close to harvest, collect at least nine commodity samples in a grid pattern. Commodity samples should be collected in the same manner as harvested, not the way it is packed or offered for sale to the consumer.

Collect at least nine dislodgeable leaf samples in a grid pattern, if the field caused, or may cause, an illness to field workers. If workers were only in one section of the field, sampling should be concentrated in that area. Dislodgeable samples are collected to determine the potential for exposure of a pesticide to an individual and are reported in a weight-to-surface area ratio. Collect samples only if workers may come into, or have been in, contact with vegetation with dislodgeable residues. Dislodgeable pesticide residues are those that originated from a **foliar** application and dislodged through

contact with the plant.

B. PESTICIDE DRIFT

It is also important to document what actually occurred through interviews and statements. This information will help in developing a Sampling Plan.

The objectives of collecting samples are to prove that the applicator did not substantially confine the pesticide to the application site and/or whether there are illegal residues on the produce in the field so that harvest can be stopped. Another objective is to determine if a field is safe to enter by field workers.

1. SAMPLING PLAN

Review records in the office (i.e., permits, grower maps, Notices of Intent to Apply Pesticides, use reports, application records, etc.) to assist you in understanding the situation. The drift could have occurred from an application several weeks prior to the initial complaint. Also, review notes from interviews and statements. There are times when the source of contamination cannot be identified, but can be narrowed down to two or three sources.

Once the alleged source(s) of contamination is determined, an outline of the Sampling Plan can be prepared. Consider the pesticide and its chemical properties; method of application; timing; wind speed and direction, if known; direction of application; etc. Refer to the "Sampling Plan (Section I) in this manual for further information.

2. SAMPLE COLLECTION

This manual outlines the sampling procedures for the different types of samples. Prior to collecting samples, refer to the "Sampling Procedures" section in this manual to determine the method, location, size, and handling procedures for sampling.

Collect a minimum of five foliage (whole leaf/blade) samples in a gradient pattern. Start sampling from an area of lowest suspected concentration in a direction towards the area of highest concentration (treatment site). Collect like samples at an equal distance from each other. The number of samples in the gradient pattern will depend on the distance between the treatment site(s) and the complaint (i.e., illness, odor, crop damage). Consider the number of pesticides to be analyzed. Collect enough foliage for multiple analyses. If the drift is suspected to have originated from a field adjacent to the episode site, a grid pattern may be used in place of the gradient pattern (see specific procedures under "Grid Pattern Foliage" Sampling section).

Soil samples should be collected only if foliage is not available. Pesticides generally break down more

readily in soil because of microbial action, heat, leaching, and photodecomposition. It can be difficult for the Chemistry Laboratory to extract some pesticides because of their binding action with soil particles.

Collect a minimum of five surface soil samples in a gradient pattern. Start sampling from the suspected lowest area of concentration and proceed in a direction towards an area of highest potential concentration (treatment site). Collect the soil samples from the surface (top one-half inch) of a measured area, at an equal distance apart. The number of samples will depend on the distance between the treatment site(s) and the complaint (i.e., illness, odor, or crop damage).

Surface (swab) samples can be collected to determine if a pesticide is present on a nonporous surface. Collect surface samples from vehicles, windows, irrigation pipe, signs, or any other nonporous surface. Always collect one control sample prior to any other sampling collection. Collect at least three samples from the area most likely to be contaminated. If a vehicle passed through the alleged drift, attempt to collect samples from the contaminated area (i.e., windshield, etc.), including the inside of the vehicle if the windows were open. Measure the surface area and be sure to include this information on the Laboratory Request for Analysis (or equivalent) Form.

Clothing samples may be collected to determine if a person was contaminated by pesticide drift. Because clothing samples are usually collected off the episode site, the history of clothing may be unknown and the samples could lose their integrity. Obtain as much information as possible for each clothing sample collected.

Clothing samples should be selected carefully. Collect clothing from people who were allegedly contaminated. Obtain the owner's signature on the Clothing Release Form and inform them that their clothing will not be returned.

Dislodgeable leaf samples are collected to determine the potential for exposure of a pesticide to an individual in the treated field. Dislodgeable residues are reported in a weight-to-surface area ratio.

Collect several samples in the area where people were allegedly exposed. If possible, use a grid pattern within the field or site. If a grid pattern is not possible, select locations where the workers or public were present, but not frequented by them. Because the drift could have occurred several days prior to the exposure, a field worker crew may have worked in the contaminated area.

Collect at least three commodity (i.e., whole fruit, vegetable, nuts, etc.) samples from the field(s) suspected of being contaminated. Select an area that you suspect would contain the **highest level** of pesticide residues. The commodity samples should be collected whole, not the form in which it is packed or offered for sale to the consumer.

C. STRUCTURAL PESTICIDE MISUSE: DIRECT APPLICATION/MOVEMENT OFF-SITE

Based on the evidence gathered, a determination was made that there was an alleged misuse of a pesticide in or around a structure. The types of possible misuses are: use inconsistent with labeling, site not on the label, increased rate, increased concentration, etc. These misuses could result in a complaint or illness.

The objective of collecting samples is to prove a violation occurred (FIFRA Section 12, 136j).

1. SAMPLING PLAN

Outline sampling goals and plan. Consider the type of pesticide and its chemical properties, method of application, labeling prohibitions, etc., before you start sampling. Refer to the "Sampling Plan" section in this manual.

2. SAMPLE COLLECTION

This manual outlines the sampling procedures for the different types of samples collected. Prior to collecting samples, refer to the "Sampling Procedures" section to determine the method, location, size, and handling procedures for sampling.

D. INSIDE A STRUCTURE

Most labels for structural use pesticides list very specific sites that can be treated. Whether it is crack and crevice, broadcast, baseboard, or spot treatment, determine where the applicator was required to apply the pesticide(s). This information can only be obtained from the label or the applicator. Compare this site and the alleged treated site with the site on the label and determine if there are any conflicts. In order to prove misuse or drift, the sampling pattern should be designed to show a delineation between the treatment site(s) and the suspected off-target site(s).

Collect one control surface (swab) sample prior to any contact with the contaminated area.

Collect several (three or more) surface samples in areas suspected of being contaminated from direct application or off-target movement of the pesticide(s). If possible, a grid or gradient pattern should be used to delineate pesticide contaminated from non-contaminated areas. Start from an area of suspected least concentration. The sample area could include carpet, furniture, walkways, vents, walls, floors, etc. However, nonporous surfaces such as metal, glass, or tile will yield the highest recoveries of suspected pesticides.

Collect one surface sample from the area supposedly, or known to be, treated. If it is impossible to reach the area to collect the sample for suspected misuse from a crack and crevice treatment, collect your last sample from the area closest to the treatment site.

Draw a diagram of the episode site. Include your sampling pattern, the treatment site, the location of furniture, fixed walls, and doors, sampled surfaces and areas, distances between samples, and reference points, etc.

E. SOIL APPLIED TREATMENT (DURSBAN, DIAZINON)

Pesticides registered for use to control termites and other pests also have very specific sites that can be treated. Broadcast, perimeter of the foundation, a five-foot band of soil around the foundation of the structure, subslab area (rod treatment), and an eight-inch deep trench around each pillar and the foundation perimeter are some of the sites listed on the labels. Determine where the applicator was required to apply the pesticide(s) and compare this site and the **alleged** treated site with the site on the label and determine if there are any conflicts. In order to prove misuse or drift, the sampling pattern should show a delineation between the labeled treatment site(s) and the off-target site.

Collect several (three or more) soil samples in areas suspected of being contaminated from direct application or off-target movement of the pesticide(s).

Collect surface soil samples to prove off-target movement (drift) or misuse of a broadcast treatment.

Collect soil samples at a specific depth if the pesticide was trenched, rod-treated, or moved below the surface in some way.

Collect one or more soil samples at the appropriate depth(s) from the area supposedly or known to be treated.

If applicable, collect several (three or more) foliage or surface samples in areas suspected of being contaminated from direct application or off-target movement of the pesticide(s).

Draw a diagram of the episode site and include the location of samples, distances between samples and landmarks, the area suspected of being treated, etc.